The Kenai Refuge's mysterious missing flying squirrels

by Ted Bailey

Most residents of the Kenai Peninsula re familiar with the red squirrel, also known as *Tamiasciurus hudsonicus* to biologists. Red squirrels are common throughout most forested areas and sometimes even make their homes in people's garages, storage shed, or attics. During winters they may dominate bird feeders, chase away our feathered friends and eat their food. Red squirrels can also be efficient predators. One study of the fates of young snowshoe hares in Canada revealed a significant percentage was killed by red squirrels.

Another Alaskan squirrel - the northern flying squirrel - is a completely different animal that occurs in Interior, Southcentral and Southeast Alaska. In Interior and Southcentral Alaska, the flying squirrel's scientific name is *Glaucomys sabrinus yukonensis*. It occurs in forested areas and is present in the Anchorage area. The flying squirrel, however, appears to be absent from the Kenai National Wildlife Refuge, perhaps the Kenai Peninsula. We have never observed a flying squirrel or received any reports from the public of flying squirrels on the Kenai National Wildlife refuge and are not aware of any published reports in the scientific literature of flying squirrels on the Kenai Peninsula.

One reason that may help explain its apparent absence is that flying squirrels are primarily nocturnal, or active at night. They are, therefore, much more difficult to observe than red squirrels. An adult flying squirrel averages only about 5 ounces, and with its broad, flattened, feather-like tail is about 12 inches long. Flying squirrels do not actually fly but leap from trees and while "in flight" extend a furred membrane between their front and rear legs that enables them to glide form three to tree or to the ground. They have large dark eyes and their fur is soft and silky, usually brown on top with grayish sides and a white belly.

Studies of flying squirrels in Interior Alaska revealed that they use tree cavities, witches' brooms and drays as dens. Witches' brooms are clumps of abnormal branches in spruce trees caused by tree rust diseases. Drays are ball-like nests of mosses, leaves and lichens lined with shredded bark and lichen and also are constructed by red squirrels. Witches' brooms also were used by flying squirrels during the coldest winter months. Then, two or more squirrels crowd together for warmth and become dormant in a deep sleep. Flying squirrels feed on fungi, such as mushrooms and truffles, berries and other foods, sometimes stealing the dried fungi cached in tree limbs by red squirrels. In Interior Alaska, tree lichens are another important food in the winter.

Flying squirrels in Interior Alaska traveled in a circular route as far as 1.2 miles in one night within an area of about 20 acres. In a year's time they used up to 13 different den trees and used trees with witches' brooms as dens more often than trees with cavities. Although dens are important to flying squirrels, they may forage away from their den for up to 7 hours on a given night.

Many species prey on flying squirrels, including great horned owls, goshawks and marten. In Alaska, about 50 percent of all flying squirrels between 1- and 2- years old dire or are killed by predators each year. Few live longer than 4 years. In the Pacific Northwest, northern flying squirrels are the primary prey of the controversial spotted owl. Flying squirrels occurred in 78 percent of the regurgitated pellets of spotted owls in one northwest forest.

The quality of forested habitats determines the presence and abundance of flying squirrels. In studies in the Pacific Northwest, flying squirrel densities and body size were higher in old forests than in young forests. Tree cavities and witches' brooms necessary for den sites and the presence of specific types of fungi for food appears to be important habitat components for flying squirrels.

The reasons flying squirrels appear to be absent from the Kenai National Wildlife Refuge, and perhaps the Kenai Peninsula, are unknowns. The open, glacial flats in the upper Turnagain Arm area may be a physical barrier to their natural dispersal from mainland Alaska. Or, periodic disturbances of many forests on the peninsula by bark beetles and fires may have influenced the quality of flying squirrel habitat. Or, perhaps flying squirrels are present on the refuge and the peninsula but we do not know about it. If you believe you have seen a flying squirrel on the refuge

- or elsewhere on the peninsula - we would like to know. Phone in your observation to the refuge at 262-7021 and leave your name and phone number and we will return your call. For additional information on Alaska's northern flying squirrel see the Alaska Department of Fish and Game Wildlife Notebook Series on the internet.

Ted Bailey, a supervisory wildlife biologist, has been responsible for the Kenai National Wildlife Refuge's biological program since 1977. He and his staff monitor and study variety of refuge wildlife.